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Subject: Comments on NCSTAR 1

Attached is a document with comments on NCSTAR1 from Tom Young, Executive Director of Northwest Concrete Masonry Association. Any questions can be directed to him at 425-697-5298 or tcyoung@nwcma.org.

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Comments on NIST NCSTAR 1.doc



Northwest Concrete Masonry Association

Comments on NIST NCSTAR 1 (Draft)

**Federal Building and Fire Safety Investigation of the World Trade Center Disaster
Final Report of the National Construction Safety Team
on the Collapse of the World Trade Center Towers (Draft)**

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General Comments

1. The Northwest Concrete Masonry Association (NWCMA) applauds NIST for its efforts in the development of this report and the recommendations. NWCMA will continue working to influence model building codes and standards for increased fire safety.
2. Many of the report recommendations that relate to technical provisions of building codes have been discussed previously and failed to be approved. NWCMA is concerned that there will be continued resistance to improvements in life safety, property protection, and welfare of the general public in future codes and standards. Disapproved code change proposals have attempted to strengthen code provisions by increasing the required fire resistance ratings of assemblies thus improving compartmentation, eliminating sprinkler trade-offs, and modifying the hose stream test of ASTM E-119 to require the more rigorous test for all specimens. The general reason cited for their disapproval is that fire data do not indicate a need for change. Mandatory requirements for reporting the performance of building construction in fires are needed to substantiate revision to these building codes and reference standards.

Specific Comments

1. Summary of Findings
Page xlix, Table E-1

This table calls for structures to achieve burnout without local or global structural collapse in uncontrolled building fires. Buildings surrounding the WTC towers experienced burnout and did not collapse. The robustness of their building elements and their ability to transfer loads appears to have played a significant role in allowing them to be reoccupied.

The use of individual building elements for multiple purposes and the use of multiple structural elements within buildings do not appear to be adequately addressed in the recommendations of this report. For example, when masonry walls are placed between structural elements (or serve as structural elements) they are providing compartmentation in addition to limiting deflections at high temperatures. Also, the report does not provide adequate recommendations for providing built-in redundancies by combining active and passive fire protection.

2. Chapter 5
Page 68, Section 5.6 “Passive Fire Protection”

The title of this section should be changed. The discussions are limited to the fire protection of steel columns and do not address other passive fire protection. This may lead to unintended misinterpretations that passive fire protection in general may not be adequate.

3. Chapter 9 – Recommendations
Page 197, Section 9.1 “Building Standards and Codes: Who is in Charge?”

NWCMA supports the adoption of local fire ordinances to further regulate building design and construction to best suit the needs of a community.

4. Chapter 9 – Recommendations
Page 200, Section 9.2 “NIST’s Recommendations for Improving the Safety of Buildings, Occupants, and Emergency Responders,” Item 2

This section needs to be expanded to include an evaluation of the performance criteria of typical construction tested per ASTM E-119. If existing fire resistance test methods are discovered to warrant revision, provisions should be incorporated into the recommendations calling for the development of a methodology that can demonstrate compliance using test results obtained from existing test standards.

Collection of data regarding the fire performance of building construction after actual structure fires would be useful in determining if priorities should be placed upon revision of existing fire test standards or on the development of additional test methods to determine the robustness of passive protection.

5. Chapter 9 – Recommendations
Page 200, Section 9.2 “NIST’s Recommendations for Improving the Safety of Buildings, Occupants, and Emergency Responders,” Items 3 and 4

There is a need for further evaluation and development of provisions to address balanced design for fire safety with appropriate redundancies.

6. Chapter 9 – Recommendations
Page 202, Section 9.2.1, Group 1 “Increased Structural Integrity”

We encourage NIST to support design that considers the benefits of other building components in increasing the fire endurance and structural integrity of individual components or structural systems.

7. Chapter 9 – Recommendations
Page 207, Section 9.2.3, Group 3 “New Methods for Fire Resistant Design of Structures,”
Recommendation 8

Consider expanding the scope of this section to buildings not defined as tall (20 stories). Prevention of collapse is important for many other buildings dependent upon the occupancy classification.

8. Chapter 9 – Recommendations
Page 207, Section 9.2.3, Group 3 “New Methods for Fire Resistant Design of Structures,”
Recommendation 8

NWCMA strongly supports this recommendation for burnout without local or global collapse. Reoccupying structures after burnout is desirable and possible as demonstrated by buildings surrounding the WTC site and others.

9. Chapter 9 – Recommendations
Page 221, Table 9.1 “Improved Emergency Response”

Hardened egress routes are appropriate for “selected other buildings” as well as buildings over 20 stories in height.